

**Disaster Risk Management Plan  
District Thatta  
Government of Sindh**

November, 2008



**District Disaster Management Authority**

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## Foreword

The local-level planning lies at the heart of successful disaster risk management. It enables the district authorities, communities and other stakeholders to coherently work for sustainable development through mitigation and prevention of hazards.

With this broad objective in mind and in line with the requirements of the National Disaster Risk Management Framework, the Provincial Disaster Management Authority (PDMA) initiated the process of developing District Disaster Risk Management Plans (DDRMPs).

As a result of NDMA's guidance and technical assistance from UNDP, we have been able to develop the DRMP of Thatta district after a consultative and participatory process. The officers of various line departments, elected representatives, NGOs and hazard-prone communities shared vital information and gave their valuable input during the planning exercise.

The Plan, among other aspects, clearly defines roles and responsibilities in pre, during and post disaster phases of all stakeholders at the district level. It also outlines Standard Operating Procedures (SOPs) for ensuring efficient and coordinated emergency response. Importantly, it provides medium and long-term strategies and measures for disaster risk management. In short, the Plan aims to save lives and reduce vulnerabilities of people; and protect livelihoods and infrastructure.

The PDMA is committed to implementing the Plan by mobilizing required funds and enhancing technical capacities of district stakeholders.

Keeping in view the changing patterns of natural and human-induced hazards, the Plan will be reviewed and revised on annual basis. To make it more useful and practical, lessons and experiences will be documented and analyzed during the implementation process.

I am grateful to Lt. Gen (Rtd.) Farooq Ahmed Khan, Chairman National Disaster Management Authority (NDMA) and Mr. Mohammad Zafar Iqbal, Assistant Resident Representative, United Nations Development Programme (UNDP) for supporting the development of the plan. We are thankful to Mr. Zubair Murshed, National Disaster Reduction Advisor, for overall conceptualization and steering the process for development of the plan. Special thanks are due to our planning expert Mr. Nadeem Mansoor for his untiring efforts in preparing a promising document through an extensive process and Mr. Shalim Kamran Dost for reviewing and editing the plan.

I hope that all the stakeholders would follow the strategic directions given in the Plan to make Thatta district safer from disaster risks.



## Message from District Nazim

The delta area of Thatta District covers largest part of the district. During the Cyclone 1999, the Jati area of Thatta district had suffered the most. The dead bodies were recovered from bushes of the mangrove forest. The number of casualties was very high in Thatta during 1999 cyclone. The human induced disasters have also taken heavy toll community Thatta District, where local administration pays very little heed to the woeful condition of the fisher-folk. One of the reasons of such apathy is the non-indigenous ruling clique of the area.

The Disaster Risk Management must aim to reduce, or avoid the potential losses from hazards, assure prompt and appropriate assistance to victims of disaster, and achieve rapid and effective recovery. The Disaster Risk Management plan illustrates the ongoing process by which governments, businesses, and civil society plan and reduce the impact of disasters, react during and immediately follow preparedness measures, better warnings, reduced vulnerability or the prevention of disasters during the next disaster scenario.

I congratulate National Disaster Management Authority (NDMA), Province Disaster Management Authority (PDMA) and United Nations Development Programme (UNDP) and his team for such a tangible and timely out put. It is expected that this plan can be used as guidelines for development of plans by the Provincial Disaster Management Authority for other districts of Sindh.

The District Government Thatta, on its part, would extend all possible assistance to the district administration for successful implementation of the Disaster Risk management plan. Additionally, the planning guidelines and framework would also be shared with tehsil, union council and community level in district to be followed during the coming years.

I am confident that this initiative would lead towards achieving the overall objectives of the plan.

**Syed Shafqat Hussain Shah Sherazi**  
Nazim District Thatta



## Message from District Coordination Officer

The Development of this Disaster Risk Management Plan for district Thatta with the support of National Disaster Management Authority (NDMA), Province Disaster Management Authority (PDMA) and United Nations Development Programme (UNDP) is a remarkable achievement for the district administration Thatta, which supported it from pillar to post during the development process.

The District Disaster Risk Management Plan aims at building capacities of the communities enabling them to minimize vulnerabilities at their own ends. The plan illustrates the ongoing developments in disaster risk management through which the government, business community and civil society together, takes joint ventures / measures to reduce the impacts of disasters on the fabric of society. This will be more beneficial and replicable in establishing early warning systems, preparedness programmes and adaptation of practical measures for coping up in future disaster scenarios.

I congratulate National Disaster Management Authority (NDMA), Province Disaster Management Authority (PDMA) and United Nations Development Programme (UNDP) and its teams for developing such a substantial and valuable document. I am hopeful and confident that the guidelines expounded in this plan will provide utmost benefit to the vulnerable communities of district Thatta.

*Laiq Memon*  
District Coordination Officer



## Acknowledgements

This plan has been developed through an extensive process of consultation with District local bodies' representatives, District Government officials, civil society organizations representatives, media representatives and politicians who participated in the consultation process for the development of this document.

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## List of Acronyms

BHU	Basic Health Unit
CBDM	Community Based Disaster Management
CBO	Community Based Organization
CD	Civil Defense
CDD	Community Development Department
DCO	District Coordination Officer
DDMA	District Disaster Management Authority
DDRMP	District Disaster Risk Management Plan
DDRO	Deputy District Revenue Office
DFC	District Food Controller
DFO	District Forest Officer
DM	Disaster Management
DO	District Officer
DRM	Disaster Risk management
DPO	District Police Officer
DRO	District Revenue Officer
DRR	Disaster Risk Reduction
EDO	Executive District Officer
EWS	Early Warning System
HRDO	Human Resources Development Officer
INGO	International Non-Governmental Organization
LGO	Local Government Ordinance
NDMA	National Disaster Management Authority
NDMC	National Disaster Management Commission
NGO	Non-Governmental Organization
PDMA	Provincial Disaster Management Authority
HVCA	Hazard Vulnerability Capacity Assessment
RHU	Rural Health Centre
RRF	Rapid Relief Force
TMA	Tehsil Municipal Administration
TMO	Tehsil Municipal Officer
UNDP	United Nations Development Program
VC	Village Council
SPDC	Sindh province data collection



## Planning Authority

Thatta District Disaster Risk Management planning authority is headed by District Nazim (Chairman), District Coordination Officer (Secretary), EDO Revenue, EDO Finance & Planning and three co-opted members from other stakeholders with the approval of the Chairman.

### Approval of the Plan

District Council Thatta is the approval authority for District Disaster Risk Management Plan, Thatta.

### Amendments to the Plan

If and when required, the planning authority will propose the amendments to the District Disaster Risk Management Plan, Thatta while District Council has the right to approve the amendments in the Plan.

### Review and Updates

District Council Thatta will review the plan after 1 year if necessary.



# Vision, Mission and Objectives

## Vision

Capacity building and strengthening of institutional arrangements, at all levels of district, to address disaster risk management as an on-going activity.

## Mission

To provide direction and guidelines to all district officials, offices and other stakeholders, to be used by all departments of the district government with roles & responsibilities of all stakeholders at all levels of the district, with clear understanding of how each stakeholder can provide support for disaster preparedness, response and mitigation in the Thatta district.

## Objectives

- i) To provide guidelines and modus operandi in the wake of any kind of crises that emerges due to Natural or man made disaster.
- ii) To activate all the Government departments, agencies, organization and NGOs to meet the crises.
- iii) To assess the state of preparedness, to provide relief to the affected people, if any.



# Basic Terms and Concepts of Disaster Risk Management

## Acceptable risk

The level of loss a society or community considers it can live with and for which it does not need to invest in mitigation

## Biological hazard

Biological vectors, micro-organisms, toxins and bioactive substances, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

## Capacity

A combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster. Capacity may include physical, institutional, social or economic means as well as skilled personal or collective attributes such as leadership and management. Capacity may also be described as capability.

## Capacity building

Efforts aimed to develop human skills or societal infrastructure within a community or organization needed to reduce the level of risk. In extended understanding, capacity building also includes development of institutional, financial, political and other resources, at different levels of the society.

## Climate change

The climate of a place or region is changed if over an extended period (typically decades or longer) there is a statistically significant change in measurements of either the mean state or variability of the climate for that region.

## Coping capacity

The means by which people or organizations use available resources and abilities to face a disaster. In general, this involves managing resources, both in normal times as well as during crises or adverse conditions.

## Disaster

A serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. It results from the combination of hazards, conditions of vulnerability and insufficient capacity to reduce the potential negative consequences of risk.

## Disaster risk management

The comprehensive approach to reduce the adverse impacts of a disaster. It encompasses all actions taken before, during, and after the disasters. It includes activities on mitigation, preparedness, emergency response, recovery, rehabilitation, and reconstruction.

### **Disaster risk reduction (disaster reduction)**

The measures aimed to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.

### **Early warning**

The provision of timely and effective information, through identified institutions, to communities and individuals so that they could take action to reduce their risk and prepare for effective response.

### **Emergency management**

The management and deployment of resources for dealing with all aspects of emergencies, in particularly preparedness, response and rehabilitation.

### **Forecast**

Estimate of the occurrence of a future event (UNESCO, WMO). This term is used with different meanings in different disciplines.

### **Geological hazard**

Natural earth processes that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. For example earthquakes, tsunamis, volcanic activity and emissions, landslides, rockslides, rock falls or avalanches, surface collapses, expansive soils and debris or mud flows.

### **Hazard**

A potentially damaging physical event or phenomenon that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include natural (geological, hydrometeorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterised by its location, intensity, frequency and probability.

### **Hazard analysis**

Identification, studies and monitoring of any hazard to determine its potential, origin, characteristics and behaviour.

### **Land-Use planning**

Branch of physical and socio-economic planning that determines the means and assesses the values or limitations of various options in which land is to be utilized, with the corresponding effects on different segments of the population or interests of a community taken into account in resulting decisions. Land-use planning can help to mitigate disasters and reduce risks by discouraging high-density settlements and construction of key installations in hazard-prone areas, control of population density and expansion.

## **Mitigation**

Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

## **Natural hazards**

Natural processes or phenomena occurring on the earth that may constitute a damaging event. Natural hazards can be classified by origin namely: geological, hydro meteorological or biological. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing.

## **Preparedness**

Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

## **Prevention**

Activities to ensure complete avoidance of the adverse impact of hazards

## **Public awareness**

The processes of informing the general population, increasing levels of consciousness about risks and how people can reduce their exposure to hazards. This is particularly important for public officials in fulfilling their responsibilities to save lives and property in the event of a disaster.

## **Recovery**

Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk.

## **Relief / response**

The provision of assistance during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term, or protracted duration.

## **Resilience / resilient**

The capacity of a community, society or organization potentially exposed to hazards to adapt, by resisting or changing in order to maintain an acceptable level of functioning. Resilience can be increased by learning from past disasters for better future protection and to improve risk reduction measures.

## **Retrofitting (or upgrading)**

Reinforcement of existing buildings and structures to become more resistant and resilient to the forces of natural hazards.

## **Risk**

The chances of losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between hazards and vulnerable social conditions. Risk is expressed as  $\text{Risk} = \text{Hazards} \times \text{Vulnerability}$ . Some experts also include the concept of exposure to refer to the physical aspects of vulnerability.

## **Risk assessment/analysis**

A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing vulnerability that could pose a potential threat to people, property, livelihoods and the environment.

## **Structural / non-structural measures**

Structural measures refer to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure. Non-structural measures refer to policies, awareness, knowledge development, public commitment, and methods and operating practices, including participatory mechanisms and the provision of information, which can reduce risk and related impacts.

## **Sustainable development**

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and the future needs. (Brundtland Commission, 1987).

## **Technological hazards**

Danger originating from technological or industrial accidents, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Some examples: industrial pollution, nuclear activities and radioactivity, toxic wastes, dam failures; transport, explosions, fires, spills.

## **Vulnerability**

The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

## **Wildland fire**

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*These terms and concepts have been adapted from the United Nations International Strategy for Disaster Reduction (UNISDR) list of terms and concepts. An effort has been made to simplify them for better understanding of the common reader in Pakistan.*

## Overview of the Thatta District

### 1.1 Geography

Thatta, one of the oldest towns in the land of ancient Indus civilization and the district headquarter of Thatta, is situated at 98 Kilo Meter (60 miles) east of Karachi on National Highway. It is situated at 23° 43' to 25° 26' north latitudes and 67° 05' to 68° 45' east longitudes (Thatta District Census Report 1998).

The district is bounded on the north and northwest by Jamshoro district, on the east by Hyderabad, Badin districts and the Indian border, on the south by Run of Kachh area and the Arabian Sea and on the west by city district Karachi.

The total area of the district is 17,355 square kilometers that is, 12.32% of the total geographical area of Sindh. River Indus flows downstream the Kotri Barrage through numerous creeks till its delta in Arabian Sea near chach deh wali Mohammad at Keti Bunder. Four tehsils of Thatta district are on the right bank, four are on left bank while one tehsil Kharo Chhan is on both sides of river Indus. The southwestern part is saline and sea-affected due to long coastline of about 107 kilometers as well as shortage of river Indus water, while the southern portion adjoining “Great Run of Kachh” on the border of India is desert like sandy area. The northern part of this district is paramount and known as “Kohistan” connected with Kheerthar range of mountains (Brief on District Thatta, District Government 2006).

The climate of the district is moderate. The mean maximum and minimum temperature recorded about 40°C and 25°C respectively. The sea breeze blows for eight months of the year, from March to October, making the hot weather comparatively cool. As a result there is an immediate fall in temperature. January is the coldest month. The annual average rainfall of the district is about 200 mm.

### 1.2 Demography

The population of Thatta district was 1.113 million in 1998 as compared to 0.761 million in 1981 recording an increase of 46.27 percent over the last 07 years. If the population continues to grow at its present rate of 2.26 percent per annum, it will double in about 31 years (World Bank 2005).

The rural population of the district was 0.988 million in 1998 constituting 89 percent of the total population. The average annual growth rate in rural population was 2.15 percent from 1981 to 1998. Males are 113 percent of females. The literacy rate in Thatta District was reported to be 22 percent in 1998. The male literacy rate was three times higher at 32 percent compared with the female literacy rate of only 11 percent. The literacy rate in urban areas was much higher at 46 percent compared to only about 19 percent in rural areas. There is a wider gap between males and females in rural areas where literacy ratio for males is 28 percent compared to only 8 percent for females. (Thatta: District Census Report 1998)

There is only one Civil Hospital and four Tehsil Hospitals in the district. Besides, there are nine Rural Health Centers and 49 Basic Health Units in the whole district. The number of dispensaries and maternity homes is 15 and 3 respectively (Department of Health District Thatta Brochure 2006).

### 1.3 Economy

Labor is divided within family between men and women as an economic unit. For instance, in fishing communities men go for fishing while women take care of livestock and separate fish from prawn once 'catch' is earned back home. In agriculture, Women from scheduled cast community work in the field right from the weeding to the harvesting and they equally share work with men. In return these non-Muslim women receive wages for their work in field. Muslim women work in the field only at harvest time. Muslim women are largely engaged with Beeri making (leaf tobacco cigarettes), Ralli making (Ralli is local handicrafts), sewing and stitching.

### 1.4 Shelter

More than 78 percent of the housing units in Thatta District have one room only. Housing units with 2 to 4 rooms are about 38 percent of the total in urban areas compared to only 19 percent in rural areas at average 4 persons live in one house. About 94 percent of the houses are owned by the occupants. Two-thirds of the housing units are thatched (constructed with wood and bamboo). Only about 14 percent houses are pacca (concrete) in the rural areas (Socio-economic Indicators at District Level Sindh 2001).

The Thatta district is very poor in terms of the indicator of piped water which is available to only about 15 percent of the housing units. About 13 percent of rural households have hand pumps inside the housing units, while 16 percent use outside ponds for fetching water and 6 percent of housing units use wells (Thatta: District Census Report 1998).

### 1.5 Society

Thatta district is rich in its heritage of pre-historic Arabian culture. The old and ancient traditions of Sindh are still in existence. The people at large are religious minded. Marriages mainly take place in exchange. Women mainly observe pardah. In the rural areas the women help their family members in the agriculture pursuits by taking part in a number of agricultural field activities.

There is an increasing tendency of chewing paan and gutka by the males and females and even children of all the ages. This has resulted in increase in the cases of oral cancer in the rural as well as urban areas of the district.

Traditionally, aged people are interested and usually participate in the local traditional games like Kodi-Kodi, Malakhra, as well as fights between the dog and the bear. However, the youngsters

prefer playing modern games specially cricket. People strongly believe in the spiritual power of the local saints.

Majority of the population of Thatta district belongs to indigenous Sindhi clans. Jokhio, Soomro, Sammo, Syed, Memon, Khoja and Mirbahar are the main tribes of Thatta district. Several other castes such as, Rind, Lashari, Makrani, Brohi, Chandio, Jat, Burfat, Chang, Jakhra, Palari, Sheikh, Qureshi, Gada, Khaskheli, Gandra, Balouch and Machhi live in the district. A large number of Hindus also live in the district. The district is basically a Sindhi-spoken area. Sindhi Language is spoken by more than 92% of the population. The other languages with meager contribution are Balochi, Brohi, Seraiki, Punjabi and Urdu.

## 1.6 Administration System

Thatta is the district headquarters of Thatta district, with nine tehsils in its revenue set up. Those tehsils are as under:

1. Thatta
2. Mirpur Sakro
3. Mirpur Bathoro
4. Ghorabari
5. Jati
6. Sujawal
7. Keti Bunder
8. Shah Bunder
9. Kharochan

Under the devolution system, the Thatta district government is administratively managed by 09-Tehsils 55-Union Councils in the district government set up. The administrative set up of the district government is composed of three tiers:

### *Office of the Zila Nazim*

Office of the District Coordination Officer followed by 09 groups of offices namely Revenue, Education, Finance & Planning, Works & Services, Agriculture, Health, Education, Information Technology and Law.

### *Zila Council*

Besides, there are 07 Tehsils in Municipal Administration.



## Disaster Risks in Thatta District

There are different types of disasters. Natural disasters include floods, droughts, famines, earthquakes, cyclones, hurricanes, tornadoes, typhoons, landslides, volcanic eruptions etc. Man-made disasters include chemical accidents, oil spills, radiological accidents, conflicts/wars, mass population displacement or refugee migration, forest fires, water cuts, diversions and mismanagement of rivers through construction of dams, barrages, link-canals, and oceanic pollution etc.

It has only recently dawned upon us to take care of our natural resources and manage them wisely so as to reduce risks that natural and man-made hazards pose to people living today and ensure that future generations are able to live in a care free manner. Emphasizing and reinforcing the environmental concerns of disaster management has become a critical priority, requiring the sound management of natural resources as a tool to prevent disasters or reduce their impacts on people, their homes and livelihoods.

The district is vulnerable to a number of natural disasters including frequent cyclones, floods, and droughts. A chronology of disasters over the last five decades reveals that the area has remained in the grip of an uninterrupted cycle of disasters in one form or the other. Cyclones, heavy rainfalls, droughts and floods follow each other with short-lived intervals. However, earthquake seems to be a rare phenomenon proving to be less disastrous in its effects in comparison to other hazards experienced by the communities at risk. Major disasters history as collected and recorded during interviews with community and NGOs is given below in table 2.1.

S #	Type of Disaster	Year	Severity	Areas most affected (Tehsil's)
1.	Cyclone	1964	Medium	Keti Bunder, Shah Bunder, Kharochan,
2.	Heavy rain fall	1973	High	Whole District
3.	Flood	1976	Medium	Thatta, Sujawal, Kharochan, Shah Bunder, Jati
4.	Heavy rain fall	1994	High	Whole District
5.	Cyclone A2	1999	High	Keti Bunder, Shah Bunder, Kharochan, Jati
6.	Earth Quake	2001	Low	Thatta, Sakro, Kharochan, Keti Bunder
7.	Flood	2003	Medium	Whole District
8.	Tsunami	2005	High	Keti Bunder, Shah Bunder, Kharochan, Jati
9.	Drought	2005	Low	Thatta

(Source EDO Revenue Thatta)

The devastating cyclone 02-A in 1999 had uprooted thousands of villages; destroying the natural

Item	Thatta
Loss of life	375
Villages affected	3,758
Cattle lost	5,667
Houses damaged	55,048
Houses destroyed	38,509
Persons affected	247,482
Relief camps established	3
Persons in shelters	3,139
Area affected (acres)	1,073,279
Crops affected (acres)	285,977

Source: OCHA/GVA - 99/0065

Thatta District has been declared as one of the poorest district of Pakistan; especially its coastal areas are extremely poverty stricken. According to latest Asian Development Bank (ADB) estimates, “The poverty figures in Badin and Thatta district are higher perhaps as high as 70 percent”. According to ADB Sindh Coastal and Inland Community Development Project Interim Report [December -2005] “54 percent of the population was found among the poorest category while another 79 percent were poor. According to the report poverty was highly correlated with household economic characteristics such as land ownership and employment opportunities. Land owners are usually among the non-poor. The intrusion of sea on the agriculture land has badly affected the perception of wealth. According to the community perception of poverty, those having no capital or any kinds of resources of their own and usually depend on the land and fishing grounds of others for their livelihood and seek their livelihood usually on daily basis are the poorest.

District	Employment	Education	Housing Quality	Housing Service
Badin	13	14	14	14
Dadu	15	6	3	8
Ghotki	5	11	16	13
Hyderabad	3	3	2	2
Jacobabad	12	13	15	10
Karachi	1	1	1	1
Khair pur	9	5	10	9
Larkana	7	8	4	4
Mirpur khas	6	10	13	12

Naushehro feroze	10	4	7	7
Nawabshah	4	7	11	5
Sanghar	8	9	12	11
Shikar pur	11	12	9	6
Sukkur	14	2	6	3
Tharpar kar	2	16	8	16
Thatta	16	15	5	15

Source: SPDC Thatta

Looking at district ranking in terms of employment, education, housing quality and housing services, one can see in terms of employment that Thatta is at the bottom. In terms of education and housing services, Tharparkar has got the lowest rank. Ghotki achieved lowest rank in terms of housing quality. Thatta appeared as the most deprived of districts in terms of employment, education, and housing services. It is because of a number of reasons:

Being in close proximity to the coast

The agricultural land of the area faces worst ever salinity issue and the ground water aquifers have become saline resulting in drastic reduction in yield per acre of various crops  
Seawater intrusion has degraded vast tracts of agriculture land

Being in extreme tail end the area constantly faces irrigation water shortages, which further threaten the agriculture livelihoods

The communities engaged in fishing livelihoods are under the bondage of exploitative contract / auction system, which has degraded their fishing earth and reduced their incomes

District	Provincial Rank Order 1 = Least Deprived 16 = Most Deprived	National Rank Order 1 = Least Deprived 100 = Most Deprived	Deprivation Scale [ 1- 100]
affected due to such extreme poverty and vulnerability.			
<b>Low Deprivation</b>			
Karachi	1	1	1.0
Hyderabad	2	12	56.3
for unemployed resources. The village communities face massive unemployment due to the			
<b>Medjum Deprivation</b>			
Sukkur	3	21	65.7
Larkana	4	27	69.5

Nausheroferoze	5	28	70.4
Nawabshah	6	29	70.5
Dadu	8	39	75.8
<b>Table 2.4: District Level Deprivation</b>			
High Deprivation			
Shikar pur	9	44	77.9
Sanghar	10	47	78.8
Mir Pur Khas	11	52	81.0
Ghotki	12	59	84.8
Jacobabad	13	63	85.7
Badin	14	76	92.4
Thatta	15	78	94.7
Thar parkar	16	84	100

Source: SDPC Thatta

The coastal tehsils of District Thatta being in close proximity to the Arabian Sea are endangered with growing seawater intrusion owing to the reduced fresh water flows/ availability. Vast land has either simply merged in sea or has become saline with seawater visible on the surface of the land during high tides. A large number of Dehs (local units of land), which were considered as fertile in the past, have amalgamated in the sea. Dozens of villages situated in those Dehs were uprooted and the villagers had to migrate to different places. A large number of villages in the proximity of the sea still face threats of inundation.

Keti Bunder and Kharo Chhan Tehsils of the district are the worst affected of the land degradation as a result of sea water intrusion. According to the Sindh Government figures, out of 43 Dehs of Keti Bunder Tehsil, 33 Dehs have been completely eroded and encroached by the sea. Similarly, the government figures show that out of 42 Dehs of Kharo Chhan tehsil 37 Dehs have been completely degraded which means more than 50% of the land of tehsil has gone to the sea (IUCN, 2001)

Likewise, ground water aquifers of the district have also degraded. Since these aquifers have not been recharged with freshwater and are filled with saline seawater. The rising salt content of the groundwater has left millions of acres of land less productive. Salt depositions in the land have affected their yields and overall agriculture production. Salts have also come up the surface and surface salinity of soils has increased, killing the previous vegetation and making land unfit for cultivation or growing natural grasses. The fallow and wastelands, which once were grazing ground, have turned into non-cultivable wastelands (According to local NGOs report, 2001).

Access to safe drinking water is extremely limited especially in the rural areas of the district. The vast majority of villages depend on watercourses, wells, canals, lakes, and ponds for drinking water and household needs. Potable water shortages are due to shortage of irrigation water in the channels. There are no ponds in majority of the villages to store water for drinking purposes once it becomes available in the nearby irrigation channels.

Ground water aquifers in majority of village areas are saline due to being in proximity of the sea as well as due to lack of fresh water supply for recharging groundwater aquifers since many years. Thus, in majority of cases the well water also happens to be saline. As a result, the villagers either drink the saline well water or travel for miles to fetch water from the wells of those villages, where fortunately ground water aquifers are still sweet. Villagers are even compelled to fetch water from a distance of 7 to 8 km from remote irrigation channels and watercourses. The women have to bear the brunt of water shortages as they travel such a large distance on foot carrying water pots on their heads to fetch water. This has drastically increased the workload of the women.

District Thatta has been suffering from the following natural calamities.

- Cyclones
- Rain Flood
- River Flood
- Sea Intrusion
- Drought

The coastal belt of Thatta District is 107 KM in which, Tehsils Jati, Kharochhan, Keti bander, Shahbander, Ghorabari and Sakro were affected, during the Cyclone of 1999. The cyclone which was traveling at about 120 miles per hour was very severe and caused huge losses to life and property. The worst affected tehsils of district Thatta were Tehsil Jati, Shah Bunder, Keti Bunder and Kharochan.

Due to its geographical position, the district Thatta Indus has been subjected to sea intrusion, cyclones, worst rain flood and river floods. Being in the tail and having large (Kohistan) areas, it has also gone through painful sufferings of drought due to meager rainfalls and shortage of water.

Following six Tehsils are situated along costal area:

- i) Mirpur Sakro

- ii) Ghorabari
- iii) Keti Bunder
- iv) Kharochan
- v) Jati
- vi) Shah Bunder

The cyclone took the district administration by surprise as it was of unpredictable intensity and did not even permit the District Administration to intimate the inhabitants of Coastal Area in time for evacuation. The population in the coastal belt especially the fishermen were left stranded and resultantly suffered heavy casualties.

Keeping in view the above recurring situation of cyclones, it is necessary to draw/ chalk out comprehensive strategy to cope up with such natural calamities. The intensity of cyclone can be classified into two categories.

**a) Low Cyclone:**

The low category cyclone is one where intensity of winds is up till 60 Km/ Hours. Here, the services of the entire District Administration would be mobilized and NGOs would be actively involved to provide safety and security to people, through evacuation and provision of sustenance at the relief camps, wherever they are necessary at the nearest town, away from the coastal belt. The Army is requested to be on the high alert.

**b) Severe Stage of Cyclone:**

The severe stage of Cyclone ranges between 120 Km/Hours and above. The situation shall be declared as severe and in such situation Armed Forces shall be requested to come forward for the assistance of Civil Administration, apart from mobilization of NGOs in District Administration itself.

**c) Flood monsoon (Rainy season):**

In Pakistan, rainy season (monsoon) starts from June and lasts till September. The average rainfall in the district is 100 mm per year. In 2003 the rain started in the first week of June and lasted till August 2003. The total rainfall was more than 250mm and it created a emergency situation in the district, resulting in massive life loss and damage to crops, livestock and infrastructure. The rainfall below 100 mm is not alarming and is found to be manageable, but the rainfall exceeding the limit of 100mm will require immediate action.

The total discharge capacity of the canals to District Thatta is 16000 cusecs. During torrential rains, the canals are closed to allow the accumulated rain water to drain through these canals, apart from normal drainage system. Although there is quite a room for improving our faulty drainage system, however by employing such measures many lives and property was saved during 2003 rains.

## 2.5 Vulnerable Areas of the District

The Vulnerable points along with Indus Bunds and F.B Bunds are as under:

### 2.5.1 Tehsil Thatta:

- |    |               |                   |
|----|---------------|-------------------|
| 1. | Sonda         |                   |
| 2. | Hillaya       |                   |
| 3. | Ali Behar     |                   |
| 4. | F.B Bund      | 13/0 to 13/4 Mile |
| 5. | Doolah Bridge | 13/4 Mile         |

### 2.5.2 Pinyari Circle:

- |     |                         |                          |
|-----|-------------------------|--------------------------|
| 1.  | Hajipur                 | 0/0 to 0/5               |
| 2.  | Hajipur                 | 3/7                      |
| 3.  | Hajipur                 | 6/0 to 6/2               |
| 4.  | Hajipur                 | 8/0 to 8/4               |
| 5.  | Hajipur                 | 12/4 to 13/5             |
| 6.  | M.S Bunds               | 3/2                      |
| 7.  | M.S Bunds               | 5/7                      |
| 8.  | M.S Bunds               | 18/3                     |
| 9.  | 1st Surjani Bunds       | 0/0 to 1/5               |
| 10. | 2nd Surjani Bunds       | 0/0 to 1/5               |
| 11. | M.S Bunds               | 42/5 to 44/3             |
| 12. | M.S Bunds               | 43/5 + 100 to 43/7 + 500 |
| 13. | Goongani Chord Bund     | 0/0 to 0/7               |
| 14. | Kuka Link Bund          | 6/0 to 7/0               |
| 15. | Kuka Link Bund          | 9/4 to 20/6              |
| 16. | Kuka Link Retarded Bund | 0/0 to 3/0               |

### 2.5.3 Sakro Division:

- |    |           |              |
|----|-----------|--------------|
| 1. | B.U. Bund | 14/7 to 16/2 |
| 2. | B.U. Bund | 27/5 to 5    |
| 3. | B.U. Bund | 35/3         |

### 2.5.4 KT Bander all UC villages

### 2.5.5 Kharo Chhan all UC villages

### 2.5.6 Jati All UC villages

### 2.5.7 Shah Bander all UC villages

## 2.6 Description of Bordering District with Hazard Profile

The district is bounded on the north and northwest by Jamshoro district, which is prone to drought and flood, on the western north by Hyderabad that is prone to heavy rainfall, on the



## Priority Strategies for Disaster Risk Management

The National Disaster Risk Management Framework of Pakistan has set 6 priority areas to promote disaster risk reduction and develop capacities at all levels of the government. The priority areas provide broad description of key strategies to achieve the overall goal of reducing disaster risk and vulnerability. The District Disaster Risk management Plan (DDRMP) Thatta refers to the national framework and has adopted a set of these component objectives to support the national governments plans and to enhance its capacities in the district. These have been further detailed into concrete activities and work plans to build disaster risk management capacities in the district. It is expected that all relevant stakeholders would actively participate in the implementation of the identified priorities.

DDRMP should be reviewed on an annual basis to ensure that the risk assessment and planning assumption remain valid and to ensure roles and responsibilities are up to date and reflect current skills and positions. The annual review and updating should also reflect the lessons learnt after each emergency response carried out by the district government.

The District Coordinating Officer with the support of the other stakeholders has the overall responsibility for monitoring progress and updating the plan. District Disaster Management Authority (DDMA) members, to be notified shortly, and other relevant government offices and personnel can be delegated to provide further support.

### 3.1 Institutional and Legal Arrangements

The National Disaster Management Ordinance 2006 provides for the creation of Disaster Management Authorities at national, provincial and district levels to develop and implement effective disaster risk management strategies and policies.

The immediate establishment of the District Disaster Management Authority (DDMA), with clear description of roles, functions and tasks before, during and after disasters is essential to develop and implement effective disaster risk management strategies in the district. The roles and functions of local government from the tehsil, union council, village council and citizen community boards will also have to be further clarified. Appropriate contingency plans and standard operating procedures should be developed to facilitate effective working and coordination within the DDMA and with other stakeholders. Constituting the DDMA would also include acquiring staff and / or identifying key personnel in charge of DRM as well as support staff. The DDMA will have to spend time and allocate appropriate funds and resources to develop guidelines, standards and procedures.

The District Nazim, District Coordination Officer and the Planning department will take the

lead in this priority area. In developing these systems and procedures, consultations should be done with relevant agencies, organizations, local government and communities to inform them about development of plan and to ensure its ownership.

The Finance & Planning department will support the district authorities to define appropriate planning and coordination methodology, identify the sources and amount of information and resources required and ensure that all responses before, during and after a disaster are well coordinated and duplication is avoided. The Finance & Planning department is to support the DDMA in making sure that the pre-planned and agreed responses and activities are carried out during actual response to the disaster.

### 3.2 Risk Assessment

Plenty of information is available with various agencies especially on status of cyclones and floods affected communities and persons. Several NGOs have started working on community-based disaster risk management in several villages and UCs. However, information on hazard risk, specific to vulnerable areas and at various levels (tehsils, union council & village) is still limited. Also, information to support planning, identifying priorities and making decisions for risk reduction is not centrally available.

Hazard, Vulnerability & Capacity Assessment (HVCA) needs to be undertaken at village, union council, tehsil and district levels. To facilitate this, there is a need to develop a mechanism and system for collecting available information and continuous monitoring of hazard risks and vulnerabilities. Various departments regularly collect data on department concerns (i.e. Agriculture department on agriculture statistics; Revenue department on land and taxes etc.) These existing system need to be reviewed to incorporate hazard and disaster risk analysis. Instruments to be developed would enable decisions to develop risk reduction policies, strategies and programs.

Village, Union Council and tehsil level maps should include analysis on vulnerability of settlements, housing stock, important infrastructure and environmental resources. They will indicate location of key settlements hazard prone areas. The analysis will describe the types of existing housing stock in hazard-prone areas, and the potential of damage to various housing categories. The Vulnerability analysis will identify key infrastructure and environmental resources in each area that is prone to damage and loss from prevalent hazards. Vulnerabilities of various social groups in hazard prone areas will also be analyzed. The HVCA will inform development of Damage, Needs Capacity Assessment (DNCA) during actual disasters. There will be separate DNCA formats and procedures at various levels of the government.

A central database should be developed and located at the District Emergency Operations Centre. The database will be made available to all stakeholders for access.

The Revenue department will be the lead agency in this priority area and will define appropriate

assessment methodology, identify the sources and amount of information required and ensure that credible baseline data and standardized sectoral assessment protocols are available in order to facilitate a timely and efficient assessment of emergency situations. NGOs and other relevant agencies will be involved in the whole process.

### 3.3 Training, Education and Awareness

Lack of knowledge of general public and local officials about severity of hazards that may affect them, associated risks, damage, and precautions to be taken, is perhaps one of the most significant hindrances in present day efforts to mitigate the potentially disastrous effects of most hazards. It is only when the dangers are understood by the people and when everyone is aware of the precautions that must be taken, that an effective government and community effort can be mobilized to save lives and minimize damages.

The government however does not have a public awareness strategy, an important fundamental in other countries. Because of this, an important priority cited for the DDMA is to identify and develop a medium term disaster awareness strategy and be equipped with financial and technical capacity to implement the strategy. DRM education, training and awareness is required in multiple sectors; e.g. civil servants in government departments and offices, staff of technical agencies, NGOs, media, politicians and communities themselves.

Training and education would involve orientation about disaster risks and vulnerabilities, skill development on risk assessment, vulnerability reduction, hazard mitigation and emergency response management. Specialized training in areas of response would also be needed; e.g. search and rescue, first aid, fire fighting, evacuation, camp management and relief distribution. Considering the importance of media, DDMA will establish partnerships with electronic and print media and develop awareness of media personnel. DDMA training, education and awareness program can minimize loss of life, injury, sufferings and property damage in a community by:

- Reducing ignorance about hazards, their nature, and the consequences of their impact

- Increasing public knowledge about the severity of disasters due to natural causes and manmade contribution.

- Increasing public knowledge about preparedness measures.

- Promoting and developing practical skills among general public with a view to improve their response.

- Developing a warning system where the public knows what the warning means and what they should do when they hear it.

- Achieving support for disaster plans, organizations and measures.

DDMA will thus focus on following priority areas to enhance knowledge and develop technical skills on disaster risk management in the district.

- Develop DRM training curricula.

- Identify competent trainers for DRM.

- Conduct courses for district, municipal and local Disaster Management Authorities in hazard prone areas.
- Develop public awareness materials (e.g. posters, brochures, booklets, videos) for training, education and public awareness.
- Organize media orientations about its role in promoting disaster risk management and community preparedness.

The Human Resources Development Department under the Office of the District Coordination Officer will be the lead agency in this priority area and will assess levels of awareness, training and skills needed among government personnel, and thereafter design, implement and evaluate awareness campaigns, skills training and drills. Training Needs Assessment (TNA) based on departmental roles will be conducted to ensure appropriate training is provided to each person or task unit. The HRDO will liaise and work with other technical agencies, NGOs and UN to support training of personal.

### **3.4 Community and Local Risk Reduction**

Program implementation at community and local level is the heart of disaster risk reduction strategies. Disasters are essentially local in terms of their impact and it is local communities and village authorities who first respond to any disaster.

Experience and historical analysis of disasters in Thatta district demonstrate that most disaster events are localized in their scale, affecting few villages and union councils, sometimes located in adjacent tehsils. Considering this characteristics of disaster risks, it is imperative that disaster risk management is implemented at local level for capacity development of local officials, communities, civil society organization and other players; e.g builders, contractors, masons, teacher and doctors. The utilization of resources and energies at this level will have a more lasting impact. Effective local authorities, local religious leaders, educational institutions, NGOs and community groups can play an important role in this work.

The DDMA will support local government at tehsil, union council and village levels in adopting the DDRMP in their own disaster risk management plans. Tehsil, union council and village authorities will formulate disaster risk management plans for their respective constituents. The plans would include analysis of hazard prone areas, vulnerabilities, resource available, strategies for risk reduction, and responsibilities of various stakeholders for disaster preparedness and response. Citizen Community Boards (CCBs) will play an important role in community disaster risk management.

Support to TMAs, UCs and village leaders would focus on community organizing, training, awareness-raising, masons training, volunteers training on search and rescue, first aid, evacuation, fire fighting etc. Based upon local risk assessment, small scale schemes for mitigation, strengthening of livelihood and local early warning systems would be implemented. Disaster preparedness activities will also be implemented at village neighborhood, city and school levels.

## Structure for Disaster Risk Management, Key Stakeholders and Action Plan

### 4.1 District Disaster Management Authority

District Disaster Management Authorities shall be established by the provincial government in hazard prone areas on a priority basis. The District Authority will comprise of the Nazim, District Coordination Officer (DCO), Police Officer, ex-officio, EDO health, and Tehsil Nazims. The local government can nominate other officers as members of the DDMA. They may include EDOs, for education and agriculture, Red Crescent, NGOs, media, private sector, fire services, or any other local stakeholders.

The DDMA is the focal organization and authority in the conduct and implementation of activities and actions on Disaster Risk Management in Thatta district. In the event of a disaster that shall affect any part of the district, the DDMA will in carry out emergency response and relief activities in the affected areas.

During the pre-disaster stage, the DDMA is expected to undertake selected activities to make it ready for the onset of any disaster.

The District Disaster Management Authority will comprise the Nazim, District Coordination Officer (DCO), District Police Officer and the EDO Health, EDOs from the Education, Social Welfare & Community development, Meteorology department, Revenue department, Agriculture departments, Finance & Planning, Works & Services, Irrigation, Army, Red Crescent, NGOs, Media, Civil Defense services, or any other local stakeholders.

After consultations and meetings conducted by the district with various stakeholders, the function of the DDMA in Thatta will be:

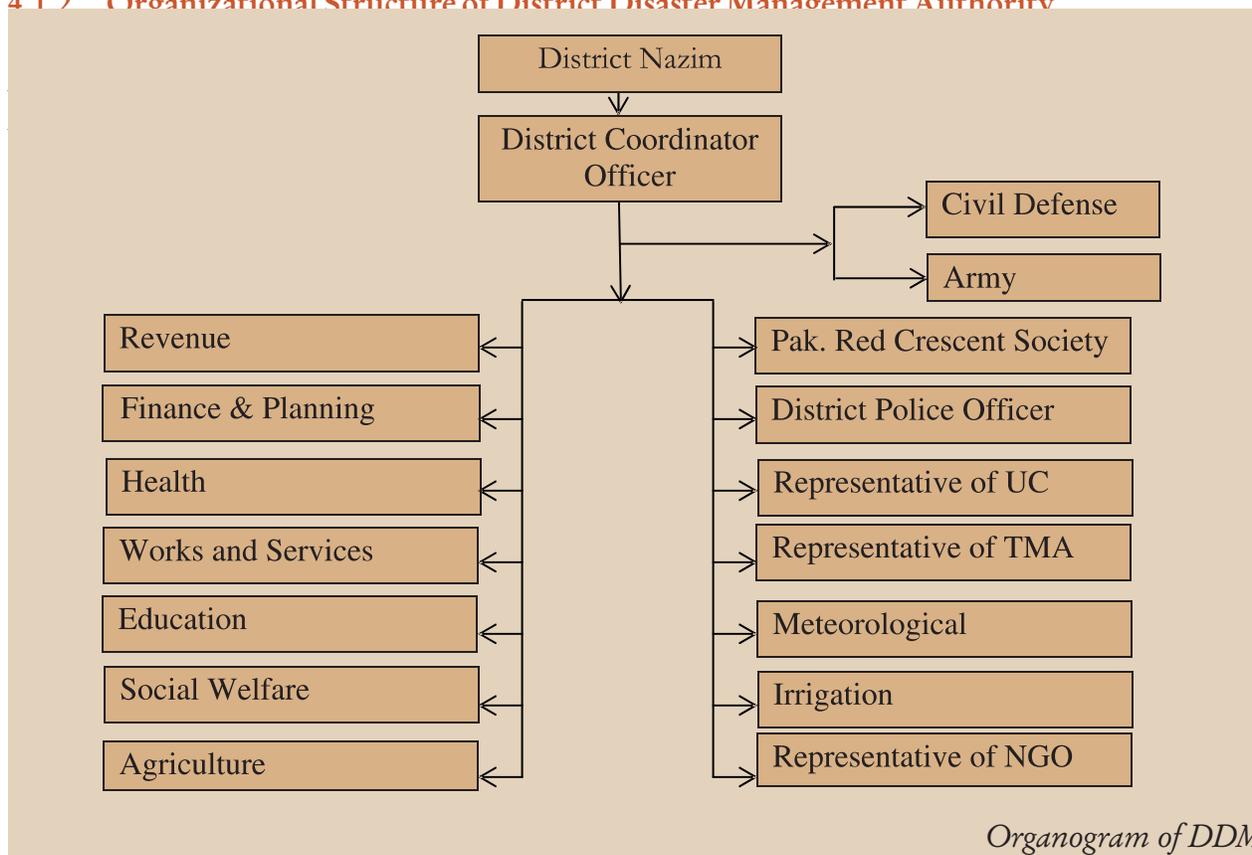
#### 4.1.1 Function of DDMA

The DDMA will do the following:

- Formulate District Disaster Risk Management Plan, based upon local risk assessment, and coordinate its implementation
- Review development plans of government departments and provide guidance on mainstreaming disaster risk reduction measures in these plans
- Prepare guidelines and standards for local stakeholders on disaster risk reduction
- Conduct education, training and public awareness programmes for local officials, stakeholders and communities
- Encourage involvement of community groups in disaster risk reduction and response by providing them necessary financial and technical assistance for implementing community level initiatives
- Examine construction in the area and if hazard safety standards have not been

- followed, direct the relevant entities to secure compliance of such standards
- Invest in specific capabilities according to the requirement to manage all types of threats peculiar to the local area
- Undertake appropriate preparedness measures at district level; e.g. maintain an early warning system, identify buildings to be used as shelter
- In the event of a disaster, organize emergency response through the District Emergency Operations Center (DEOC)
- Maintain linkages with the Provincial Disaster Management Authority and the Relief department
- Perform other functions as assigned to it by the provincial authority
- Vulnerable areas of the district should be identified and DRM measures should be taken to reduce the losses and the suffering of the communities

4.1.2 Organizational Structure of District Disaster Management Authority



Organogram of DDMA

## 4.2 Role & Responsibilities of Member Departments at District Level

### 4.2.1 Agriculture & livestock

#### *Pre-Disaster*

- Capacity building of Agriculture department regarding disaster risk management
- Provide recommendation on changing/rescheduling of cropping patterns
- Create Community Seed Bank at Union Council level
- Provide livestock vaccination & de-worming
- Assessment of high prone areas and estimation of possible damage and needs for recovery regarding livestock, crops, irrigation facilities in case of any disaster
- Mass awareness regarding epidemics and diseases to livestock and crops
- Regular surveillance of rivers, canals, barrages and head works, other water courses which are most likely to be in flood
- Close coordination with Meteorology department & media, especially during monsoon

#### *During-Disaster*

- Close & regular coordination with DEOC
- Immediate transfer of current situation to DDMA and media to be spread for mass awareness
- Set up temporary offices in canal rest houses and other buildings as per need
- Vaccination of livestock

#### *Post-Disaster*

- Facilitation to institutions / NGOs/ INGOs which focus on rehabilitation activities
- Prepare report on damages and needs submit to DDMA
- Upgrade Community Seed Bank (CSB)
- Mass awareness regarding epidemics and diseases to livestock and crops
- Repair and rehabilitation of canals, barrages and head works, other water courses which caused damage during flood
- Timely compensation to affected farmers
- Vaccination of livestock
- Prepare overall report of the department regarding intervention and disseminate to DDMA and other GOs / NGOs/INGOs

### 4.2.2 Army

#### *Pre-Disaster*

- Coordinate with the DDMA in the pr-disaster planning
- Prepare necessary equipments, labor, transportation and other materials for emergency interventions

- Protect roads from getting flooded (i.e. sand bagging and enforcement of embankments)
- Provide training to soldiers and determine the role of soldiers who are stationed in flood prone areas
- Assist in evacuation of people to safe places

#### *During-Disaster*

- Maintain liaison with the DEOC for vital inputs during response
- Collect information and warn appropriate Army units for engagement in safety, rescue and evacuation activities
- Establish communication infrastructure and supplement the civil communication set-up if required
- Coordinate all military activity required by the civil administration
- Provision of medical care with the help of the medical teams, including treatment at the nearest armed forces hospital
- Transportation of relief material
- Provision of logistic back-up (aircrafts, helicopters, boats)
- Establish Relief Camps
- Assist in evacuation of people to safe places during the disaster
- Installation of temporary bridges, Bunds
- Maintain law and order situation where police department calls for help

#### *Post-Disaster*

- Cooperate and coordinate with district authorities
- Coordinate with line departments for capacity building in sectors such as road construction, telecommunication, medical facilities and other infrastructural development
- Prepare overall report of the department regarding intervention and disseminate to DDMA and other GOs / NGOs/INGOs

### **4.2.3 Civil Defense**

#### *Pre-Disaster*

- Assign representatives for DDMA, and participate in meetings
- Information sharing regarding capacities and needs of Civil Defense department regarding disaster risk management
- Capacity building of Civil Defense department regarding disaster risk management
- Information sharing regarding technical and personnel expertise with DDMA
- Conduct trainings for Volunteers regarding Rescue and other relevant expertise in collaboration with Health and Community Development department
- Create awareness regarding rescue, evacuation and first aid

Affectively establish, train and systemize volunteers initiatives in collaboration with education department / institutions

Develop early warning system

Coordinate closely with Meteorology department & media, especially during monsoon and inform all line departments on any disaster situation

#### *During-Disaster*

Fire fighting

Rescue and evacuation

Assign volunteers in coordination with Community Development and Education departments for disaster response initiatives

Communicate to DEOC about details of all activities

Communicate to DEOC any additional resources required for performing the above tasks

Facilitate line departments as per demand in disaster response

#### *Post-Disaster*

Identify gaps, make plan for future to overcome weakness of department

Prepare overall report of the department regarding interventions and disseminate to DDMA and other GOs / NGOs/INGOs

### **4.2.4 Education**

#### *Pre-Disaster*

Assign representatives for DDMA and participate in meetings

Information sharing regarding capacities and needs of Education department regarding disaster risk management

Teachers and students are informed about the disaster prone areas of the district

Teachers and students are informed of their responsibilities to take care of materials and documents to safe places during disaster

Facilitate and collaborate with Health and Environment department in preparation of health & environment related curriculum

Collaborate with Civil Defense department in systemizing volunteers

#### *During-Disaster*

Mobilize human resources for intervention during disaster

Inform schools situated in high risk areas about flood information (flood level)

Arrange relief and shelter camps in educational institutes for the disaster affectees

Facilitate Health department in medical camps, blood donations and provision of medical aid

Coordinate with Civil Defense & Community Development departments in assigning volunteers for emergency response

*Post-Disaster*

- Assessment of damages occurred to educational institutes
- Provide assistance to teachers & students and other staff who are victimized by disasters (lack of food, shelter, etc.)
- Collect information on adverse impacts of flood disaster on health of teachers and students (psychosocial care)
- Rehabilitation and reconstruction of affected educational facilities
- Facilitate institutions / NGOs / INGOs which focus on rehabilitation of educational facilities
- Prepare overall report of the department regarding intervention and disseminate to DDMA and other GOs / NGOs/INGO

**4.2.5 Finance & Planning**

*Pre-Disaster*

- Regular coordination with DDMA
- Allocate budget on contingency basis, to handle any emergency situations
- Plan, identify, and procure potential resources that might be required/desired to handle disaster situations
- Facilitate other departments in planning and meeting their financial needs

*During-Disaster*

- Procure and disseminate material and equipment for emergency response
- Provide funds to other line departments for rescue and relief activities

*Post-Disaster*

- Get statistical data regarding actual damage and recovery needs from all line departments
- Facilitate other departments in planning and execution of rehabilitation in a cost effective manner
- Coordinate with all line Departments

**4.2.6 Health**

*Pre-Disaster*

- Assign representatives for DDMA, and participate in meetings
- Information sharing regarding capacities and needs of Health department regarding disaster risk management
- Build capacity of health department regarding disaster risk management and preventive health care especially in disaster prone areas
- Monitor the general health situation, e.g. monitor outbreak of diseases
- Provide specific information required regarding precautions for epidemics

Establish a health mobile team in district & tehsil headquarter hospital  
Set-up an information centre to organize sharing of information for public information purposes  
Prepare first aid kits, medicines, water test kits, chloramines and anti snake venom serum.  
Collaboration with relevant organizations / partner NGOs for participation and support through financial and technical resources  
Up-gradation and smooth functioning of hospitals, BHUs, equipped with required staff, medicines and equipment  
Database and linkages with ambulance services/blood banks  
Health & hygiene awareness and education  
Facilitate Education department and institutions regarding preparation of health related curriculum  
Facilitate Water Management department in treatment and disposal of industrial and urban waste  
Ensure proper disposal of hospital waste

*During-Disaster*

Provide emergency treatment for the seriously injured  
Ensure emergency supplies of medicines and first-aid  
Supervise food, water supplies, sanitation and disposal of waste  
Assess and co-ordinate provision of ambulances and hospitals where they could be sent (public and private);  
Provide special information required regarding precautions for epidemics  
Set-up an information centre to organize sharing of information for public info purposes  
Conduct impact assessment on health  
Intervene immediately when there is a disease outbreak  
Prepare plan for the following year along with reports and submit to DDMA.  
Medical camps and vaccination  
Health education in collaboration with Social Welfare and Education departments.  
Ongoing surveillance  
Facilitate institutions / NGOs/ INGOs which focus on rehabilitation of health facilities  
Rehabilitation of health infrastructure affected during disaster  
Preparation of impact assessment surveys covering strengths and weaknesses of interventions and impact on affected victims and dissemination learning to DDMA

*Post-Disaster*

Conduct impact assessment on health situation

Prepare plan for the following year along with reports and submit to DDMA.

Medical camps and vaccination

Health education in collaboration with Social Welfare and Education departments.

Ongoing surveillance

Facilitate institutions / NGOs/ INGOs which focus on rehabilitation of health facilities

Rehabilitation of health infrastructure affected during disaster

Preparation of impact assessment surveys covering strengths and weaknesses of interventions and impact on affected victims and dissemination learning to DDMA and other concerned institutions

In collaboration with Water Management department conduct impact assessment and monitoring to inspect treatment and disposal of industrial, urban waste and hospital waste

#### 4.2.7 Irrigation

##### *Pre-Disaster*

Monitor water level

Collect information on water level prepare equipment and machinery (pumping machines) to irrigate crop fields where water is scarce

Dig canals to irrigate from reservoirs to dry areas

Request the local authorities to share information on damaged irrigation canals and channels

##### *During-Disaster*

Respond to specific water level and report to other line departments

Provide pumping machines to pump water out from public places

Cooperate with other line departments, NGOs

Check irrigation systems when water level rises

##### *Post-Disaster*

Conduct assessment of damages and needs and report to DDMA through DEOC

Restore and repair damaged irrigation systems

In collaboration with Health & Environment department, conduct impact assessment and monitor water quality

Prepare overall report of the department regarding intervention and disseminate to DDMA and other GOs / NGOs/INGOs

#### 4.2.8 Media

##### *Pre-Disaster*

Trainings for disaster reporting

Publish, broadcast /telecast plans of DDMA regarding disaster risk management

and also voice public opinion

Close coordination with Meteorological, Irrigation, Civil Defense departments for announcing warnings and updates

Awareness raising in collaboration with departments such as Health, Education, Environment

#### *During-Disaster*

Close coordination with Meteorological, Irrigation, Civil Defense departments for announcing warnings and updates

Highlight disaster struck areas in detail

Publish, broadcast /teecast programs of safety measures during disaster

#### *Post-Disaster*

Focus on problems being faced by the people of the affected area

Publish, broadcast /teecast programs highlighting strengths, weaknesses and scams in disaster response activities

### 4.2.9 Meteorology

#### *Pre-Disaster*

Update and upgrade forecast equipment

Timely and authentic forecast of rains, windstorms

Timely transfer of information regarding abnormal weather conditions to media and other concerned departments

#### *During-Disaster*

Update and upgrade forecast equipment

Timely and authentic forecast of rains, windstorms

Timely transfer of information regarding abnormal weather conditions to media and other concerned departments

#### *Post-Disaster*

In coordination with Environment department, conduct study of factors which cause abnormal weather changes

Evaluate gaps in information sharing

### 4.2.10 NGOs / INGOs

#### *Pre-Disaster*

Facilitate DDMA member departments for capacity building regarding disaster risk management

Capacity building of community groups regarding disaster risk management

Linkages with concerned departments and institutions for providing technical and financial resources regarding diverse sectors related to disaster

Resource mobilization at local and international level

*During-Disaster*

- Collaborate and facilitate in relief operations
- Incorporate local and international expertise in disaster response
- Establish temporary shelters & camps
- Facilitate in overall disaster response in collaboration with concerned departments (e.g. medical aid with Health department and so on)
- Regular updates and alerts to local & international partners
- Utilization of existing resources and further mobilization at local and international level
- Assessment of losses using sphere standards

*Post-Disaster*

- Collaborate and facilitate in rehabilitation activities
- Incorporate local and international expertise in rehabilitation activities
- Facilitate overall rehabilitation in collaboration with concerned departments
- Impact assessment studies and sharing findings with DDMA, local and international partners
- Preparation of overall reports and share with DDMA and other partners
- Linkages with partners for sustainable resources mobilization

**4.2.11 Police**

*Pre-Disaster*

- Assign representatives for DDMA,
- Participate in DDMA meetings
- Information sharing regarding capacities and needs of Police department regarding disaster risk management
- Capacity building of Police department regarding disaster risk management
- Information dissemination through 15 helpline service to local residents
- Prepare team for emergency intervention
- Prepare plan for shifting to safer places and early warning system

*During-Disaster*

- Co-ordinate with DEOC
- Shifting the rescued/affected people to hospitals
- Providing easy access to rescue and relief personnel/vehicles
- Corpse disposal
- Maintain law and order
- Prohibit overloading goods in trucks

- Provide warning / instruction to travelers
- Divert traffic on alternate routes as and when necessary
- Ensure security to workers of NGOs and INGOS who perform duties for disaster response

*Post-Disaster*

- Cooperate with DDMA
- Provide security in Relief Camps
- Ensure security to workers of NGOs and INGOS who perform duties for the relief & rehabilitation of the victims
- Prepare overall report of the department regarding intervention and disseminate to DDMA and other GOs / NGOs/INGOs
- Development of contingency plan in the light of lesson learnt

**4.2.12 Revenue**

*Pre-Disaster*

- Assign representatives for DDMA, and participate in meetings
- Information sharing regarding capacities and needs of Revenue department regarding disaster risk management
- Capacity building of Revenue department regarding disaster risk management
- Assessment of high prone areas and estimation of possible damage and needs for recovery in case of emergency
- Arrangement of financial resources (bloc grants)
- Facilitate getting tax exemptions to institutions/NGOs/INGOs focus on disaster risk management
- Collect and update population data at village level

*During-Disaster*

- Coordination with the DEOC
- Establish relief distribution centers
- Accept relief donations and relief support
- Timely release of funds
- Request assistance from the DEOC, as needed
- Submit financial reports to the DEOC of the operations for onward circulation to all stakeholders

*Post-Disaster*

- Submit progress report to all relevant stakeholders
- Assessment of damage of industry/business, crops and livestock and settlement of applicable taxes accordingly in coordination with Industry, Agriculture and Irrigation departments.

Capacity building of Social Welfare department regarding disaster risk management

#### 4.2.13 Social Welfare and Community Development

##### *Pre-Disaster*

Coordination of all NGOs and civil society organization working for disaster risk management

Empower the extremely vulnerable people emphasizing women and children through public awareness involving respective departments for various fields such as Education, Health etc

Capacity building of CCBs, CBOs and other community groups

Facilitate institutions / NGOs/ INGOs which focus on rehabilitation activities and provide funds wherever desired

##### *During-Disaster*

Provide information on the situation of the disaster to the DEOC

Coordinate all NGOs / INGOs and civil society organizations working during the emergency response

Monitor progress of relief operations in the affected areas

In coordination with Health and Revenue departments , ensure delivery of relief to most vulnerable segments of society such as children, orphans, widows, destitute

Send advisories to the DEOC on the progress of the disaster situation

Assist and facilitate Damage and Needs Assessment teams from NGOs

Share its human resources with DDMA.

##### *Post-Disaster*

Monitor and follow up the status of the extremely vulnerable people

Assist and facilitate Damage and Needs Assessment teams from NGOs

Conduct impact assessment studies and analysis of strengths and weaknesses of stakeholders and disseminate learning to DDMA and other concerned institutions

#### 4.2.14 Works and Services

##### *Pre-Disaster*

Coordination with DEOC

Linkages with GOs/NGOs/INGOs

Inspection and checking of all buildings, bridges, roads and communication infrastructure

Develop contingency plan for disaster risk management

Capacity building of all department for disaster risk management

*During-Disaster*

Priorities	Time Frame		Tentative Cost	
	(in Years)		(Pak Rupees)	
	2009	2010	2009	2010
<b>1. Formation, Establishment and Orientation of District Disaster Management Authority (DDMA)</b>			200,000/-	
An official notification to be issued by the DCO about the establishment of DDMA				
In the light of NDMO and the National Disaster Risk Management Framework, the terms of reference (ToRs) will be developed in respect of roles, responsibilities, mandate and other functions of DDMA.				
An official ceremony will be organized to launch the establishment of DDMA				
A 2-day orientation session on disaster risk management will be organized for the members / staff of DDMA				
Purchase of essential IT equipment and furniture				
<b>2. Organization of three separate orientation sessions by NDMA / PDMA representatives with district departments, elected members and other stakeholders about the structure, roles and mandate of DDMA to inform, sensitize and take on board all stakeholders</b>			200,000/-	
<b>3. Establishment of District Emergency Operations Centre (DEOC) and Early Warning System:</b>			1,000,000/-	
<b>4. Organizing specialized training workshops</b>				400,000/-
3-day training for the staff of DEOC on early warning processing and dissemination, emergency response coordination skills and techniques, and overall management of the DEOC				
3-day training of district departments and other stakeholders on Flood, Cyclone, Earthquake and Drought Mitigation				
2-day training of key district departments (Civil Defence, Revenue, Social Welfare & Community Development etc.) On developing district, taluka, union and village-level disaster risk management plans				
3-day training of key district departments and relevant local NGOs on conducting Risk, Vulnerability & Capacity Assessment (RVCA).				
<b>5. Establishing and training District Disaster Response Teams (DDRTs) comprising First Aid and Search &amp; Rescue</b>				500,000/-
Identification of members for both the teams				

5-day training on First Aid				
5-day training on Search & Rescue				
<b>6. Undertake District Disaster Risk Assessment</b> DDMA will undertake a thorough assessment of existing hazards and associated risks, identification of risk-prone areas and types of vulnerabilities, and document the capacities / resources available with the district government, civil society organizations and local communities with regard to disaster risk management				1,000,000/-
<b>Grand Total</b>				3,300,000/-

## Standard Operating Procedures

The District Disaster Risk Management Plan intends to provide direction and guidelines to all the stakeholders of the district. The plan is primarily for use by all departments in the District Government, especially by those whose roles and responsibilities are outlined herein and also by government staff at the district, tehsil, union council and village levels. This plan facilitates the provincial and national government, UN agencies, donors, non-government organizations and philanthropic individuals and companies understand as to how they can support in disaster risk management in District Thatta. The coordination mechanism during the disaster event in district will be established by the head of DDMA.

### 5.1 District Disaster Management Authority (DDMA):

DDMA is responsible for coordinating all components of the disaster risk management for the district. The components consist of activities related to mitigation, preparedness, response, recovery and rehabilitation. The following action would be taken by the DDMA,

- To conduct an emergency meeting to assess and communicate the disaster situation
- To direct the Revenue, Irrigation, Works & Service, Health and CCD departments for Damage & Need Assessment
- To direct the District Emergency Operations Center (DEOC) to disseminate the disaster situation to the media and public
- To direct the District Emergency Operations center (DEOC) to collect information from Metreological, Revenue, Health, Irrigation, Works & Service and Information departments for public dissemination
- After data collection of Damage and Need Assessment (D&NA) by Revenue, Irrigation, Works & Service, Health and CCD departments and appeal to be launched to PDMA, NDMA as well as donors for relief and response
- To conduct a meeting to get disaster update and follow up the relief and response initiatives

### 5.2 District Emergency Operations Center (DEOC)

District Emergency Operations Centre (DEOC) represents the physical location at which the coordination of information and resources to support emergency program activities normally takes place. The DEOC will be in close coordination during any disaster situation with all the district departments and stakeholders of civil society. Following are some of the actions to be taken.

- To collect and disseminate information on the disaster situation to Revenue, Irrigation, Health, Education, Agriculture and Livestock, Works & Services, Police, CDD, Metereology and Information departments of the district
- Send out updates on the Disaster Situation to the DDMA and the general public
- Operate a Public Information Display Area for immediate access to information for the public and media regarding the disaster and the current situation

Make recommendations from Revenue, Irrigation, Works & Services, CDD, Agriculture and Livestock departments regarding the Damage and Needs Assessment findings

Generate and provide all information contained in the Risk and Vulnerability Assessment document to all the other control rooms and in special circumstances communicate the locations disaster prone sites to all control rooms

Monitor disaster warning or disaster occurrence and communicate the same to the tehsils, union councils, and the villages for better preparedness and effective response in coordination with and on the advice of the relevant agencies

Coordinate with other control rooms and relief coming into the district

DEOC may also support multi-agency coordination and joint information activities

Additionally, DEOC at all levels of government and across functional agencies, must be capable of communicating appropriately with others and all concerned stakeholders during incidents, including those maintained by private organizations

Communication between DEOC must be from reliable sources

### **5.3. Agriculture:**

Damage and Losses Assessment of crops, livestock, fisheries, forest and soil

Share initial report to DEOC for immediate action

Establishment of veterinary service units for necessary services

To provide information and coordination with DEOC

### **5.4 Health:**

Coordination meeting with all health units for situation analysis

To mobilize entire health network for assessing health needs

Establish and organize mobile teams for first aid and basic medication to disaster affected communities

To arrange medical facilities at relief camps

To provide information and coordination with DEOC

### **5.5 Irrigation & Drain:**

Develop discharge control mechanism before onset of monsoon

Conduct inspection of all irrigation channels & drains

Assign teams for regular watch of embankment (bunds) of channels and drains

Submission of daily update report to DEOC

Coordinate and communicate with DEOC

### **5.6 Police:**

Disseminate early warning to vulnerable areas through police stations and police

posts

Make logistics arrangements for evacuation and relief work with coordination of DEOC and Revenue department

Make security arrangements for relief camps and disaster affected locations

Make coordination and communication with DEOC

### **5.7 Revenue:**

To conduct coordination meeting with all Tehsil DDOs for situation of Disaster

To make coordination and communication with DEOC

To conduct Damage & Losses Report

Evacuation of effected communities to safer places

Establishment of Relief Camps

Arrangement of necessary commodities for affected communities

### **5.8 Works & Services:**

To conduct coordination meeting with all SDOs for current situation report of community infrastructure

To conduct Damage & Need Assessment of community infrastructure

To ensure immediate maintenance of communication means for effective emergency response

To provide information and coordinate with DEOC

### **5.9 Mechanism of Warnings**

Departments Such as Civil Defence, Metereology, Revenue, Irrigation, Police and Information would establish and upgrade early warning system and pass on warnings of a disasters occurrence directly to DEOC, that will pass on to the Chairman of DDMA and to media. DDMA will direct the departments to take immediate steps (as per nature of disaster). Other then DDMA, Chairman will call an emergency meeting of all member departments.

### **5.10 Public Information**

Public information is that information which is passed on to the public prior, during, and after a disaster, such as warnings and directions for evacuations and service access to affected populations. The District Information Officer is responsible to disseminate disaster situation information to the media and public. DEOC will arrange the media briefings and interviews with key personnel and media channels for proper dissemination of the information concerning disaster situation in order to reduce the losses.

### **5.11 Reporting**

All responsible departments i.e. Civil Defence, Meteorology, Revenue, Health, Works and Service, Finance & Planning, Irrigation and Police organizations are to submit regular updated situation reports to the DEOC. The communication officer will collect the reports received and

circulate regular update and situation reports to all concerned stakeholders as well as DDMA.

### **5.12 Requests for Assistance**

As of any disaster event, requests for any assistance from outside the district will be made by the Secretary DDMA (District Coordination Officer (DCO)) to the Provincial Disaster Management Authority. The Tehsil Administration and Union Council bodies will make request to the District Nazim, Chairman (DDMA) for the possible relief and response interventions in any disaster situation.

However, the DEOC will arrange the coordination mechanism by inviting all concerned NGOs/donors and institution to put their efforts by working together with DDMA for reducing the impacts of the disaster.

### **5.13 Plan Dissemination**

In addition to dissemination of the literature related to the reduction of disaster risks, DDMA will disseminate the District Disaster Risk Management Plan (DDRMP) to EDO CDD, EDO Revenue and District Information Officer at government departments, state level officials, Tehsil, Union Council and Village leadership, mass media, general public and existing CBOs and collaborating NGOs in the district.

### **5.14 Community Involvement and Participation**

Thatta DEOC and NGOs of the disaster struck area should ensure maximum community participation in all stages of emergency operation in order to maintain community morale and confidence to utilize maximum local resources that will promote a faster recovery. Disaster situations offer a wide range of choice and demands which requires immediate decision making. The community participation would reduce the pressures on the field agencies with regard to the choice and un-certain response to the decisions.

The representatives of CCBs at local level may be involved in different activities of the disaster response for relief and rehabilitation activities as this local unit exists in all Union Councils as per the LGO 2001.

### **5.15 Organizing the Drills**

In pre-disaster situation, the DDMA will plan and carry out drills with Civil Defense, Revenue, Irrigation, Health, Work & Services, Agriculture and Livestock, Police, Media and NGOs and community members aiming at reduction in disaster casualties wider losses of the disaster. Following drills will be organized with the support of civil defense department;

- How to evacuate communities during disaster situation
- How to deal with fires

## Conclusion

DDRMP has been designed in consultation with all the stakeholders of the district describing hazard vulnerability, strategies for disaster response, preparedness, mitigation and recovery initiatives to reduce risks of the impact of the disaster in the district. Each stakeholder should take the responsibility of developing contingency and Recovery Plans based on their areas of competence and mandate in collaboration with other stakeholders. This plan is a guiding tool which will be reviewed every year by all stakeholders' the suggestion with help to make it more district specified for minimizing the risks of the natural and man made disaster situation, this plan is also a guide to all partners as to how they should reduce the vulnerability and the risks of the community.

